REMARKS

Applicants have amended the specification and claims to more particularly define the invention in view of the outstanding Official Action. The specification has been amended to provide the alternate wording perfluorocarbon which one of ordinary skill in the art would appreciate is a hydrocarbon with all of the hydrogen atoms replaced with fluorine. The claims have been amended in a similar matter as fully supported by Applicants' specification. All of the claims now remaining in the application, claims 1-8, are in full compliance with 35 USC 112 and are clearly patentable over the references of record. pending in the present application.

More particularly, claims 1-8 have been amended to provide that the first fluorocarbon and the second fluorocarbon are further limited as the first perfluorocarbon and the second perfluorocarbon, and the corresponding description on page 4, line 12 of the specification has also been amended. These amendments are fully supported by the description on page 4, line 1-12 of the original specification, which definitely indicates that pure fluorocarbon without hydrogen is a preferred selection as would be appreciated by one of ordinary skill in the art to which the invention pertains. .

The rejection of claims 1-3 and 5-7 as unpatentable under 35 USC 103(a) over US Patent No. 6,890,863 (referred to 863 hereinafter) in view of US Patent No. 5,010,032 (referred to 032 hereinafter) has been carefully considered but is most respectfully traversed in view of the amendments to the claims and the following comments. In addition, the obviousness rejection of claims 4 and 8 over this combination of references and further in view of US Patent No. 6,784,111 (referred to 111 hereinafter) has also been carefully considered but is most respectfully traversed.

Applicants wish to direct the Examiner's attention to the basic requirements of a prima facie case of obviousness as set forth in the MPEP § 2143. This section states that to establish a prima facie case of obviousness, three basic criteria first must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the

reference or to combine the reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Section 2143.03 states that all claim limitations must be taught or suggested by the prior art. In re Royka, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." In re Wilson, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. In re Fine, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988).

Applicants also most respectfully direct the Examiner's attention to MPEP § 2144.08 (page 2100-114) wherein it is stated that Office personnel should consider all rebuttal argument and evidence present by applicant and the citation of In re Soni for error in not considering evidence presented in the specification.

The Official Action urges that the '863 patent discloses a method similar to that of the present application. However, in the '863 patent, the formation of the pad oxide and pad nitride are not mentioned. More important, the '863 patent discloses a process employing a mixture of two preferred etchant gases: a **hydrofluorocarbon** and a selectivity compound consisting of carbon and fluorine, wherein the latter is a selectivity enhancing gas that is preferably one of CF_4, C_2F_6, C_4F_8, C_5F_6, C_5F_8, and combinations thereof. It is clear to one of ordinary skill in the art that the '863 patent requires a mixture of a **hydrofluorocarbon** and a perfluorocarbon. The amended Claim 1 of the present application is significantly distinguishable from the teachings of the '863 patent as would be appreciated by one of ordinary skill in the art to which the invention pertains. Furthermore, the fluorine-to-carbon ratios of the two fluorocarbons are not necessarily different from each other in '863 patent, that is, the ratio of fluorine to carbon of one of the fluorocarbons is not necessarily higher than that of the other one. In one

embodiment taught in the '863 patent, where CHF_3 and C_2F_6 are used, it is clear that the fluorine-to-carbon ratios for these two fluorocarbons are the same. Accordingly, '863 patent does not teach to one of ordinary skill in the art the important feature of the present invention that fluorine-to-carbon ratio of the second perfluorocarbon must be higher than that of the first perfluorocarbon. In addition, as admitted by the Examiner, the '863 patent does not mention the inclusion of O_2.

The '032 patent mentions that normal fluorine-based oxide etch chemistries, such as CF_4 plus 5% O_2, are reasonably selective to TiN. However, in the etchant gas combinations disclosed in the '032, such as CHF_3+C_2F_6+O_2+He, the fluorine-to-carbon ratios of the two fluorocarbons are the same in this case, furthermore, one of the fluorocarbons is hydrofluorocarbon. The '032 patent does not teach one of ordinary skill in the art such limits that the both fluorocarbons are perfluorocarbon, and fluorine-to-carbon ratio of the second perfluorocarbon is higher than that of the first perfluorocarbon in accordance with the presently claimed invention. The necessary motivation to combine the teachings of the references is not present and Applicants specification may not be used to provide such a teaching as this would be improper hindsight. In re Fritch, 23 USPQ 1780, 1784(Fed Cir. 1992) ("It is impermissible to engage in hindsight reconstruction of the claimed invention, using the applicant's structure as a template and selecting elements from references to fill the gaps.). Accordingly, it is most respectfully requested that this rejection be withdrawn.

The rejection of claims 4 and 8 as obvious over the combination of the primary references and the teachings of the '111 patent should also be withdrawn as the deficiencies of the primary references as discussed above are not overcome by the teachings of the '111 patent.

Applicants acknowledge that the '111 patent mentions the gas CH_2F_2, CF_4, CHF_3, CH_3F, C_2F_6. C_2HF_5, C_3F_8, C_4F_8, C_4F_6 and C_5F_8 and their combination can be used. However, the '111 patent does not clearly and definitely teach one of ordinary skill in the art the specific conditions for selecting the gases. Although the gas combination in the cited references would cover a combination which meets the condition that the fluorine-

to-carbon ratio of the second perfluorocarbon is higher than that of the first one, none of the three cited references indicates such a limit. This limit is an essential feature for the present application. The present application is a "specific invention" with respect to the cited references, and achieves remarkable effects as exhibited by the experimental data of the specification.

In view of the above comments and further amendments to the claims, favorable reconsideration and allowance of all of the claims now present in the application are most respectfully requested.

Respectfully submitted,

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